

mant state. Probably they will arrive at maturity by July or August next. The sixth specimen did not bury itself until the 15th of August.

Second Experiment with Helix aspersa.

A pair of *Helix aspersa* having been procured in the act of copulation on the 19th of May 1852, they were placed in confinement. Each individual deposited about 70 eggs, which began to hatch on the 20th of June: these young ones grew but little during the summer. They buried themselves in the soil on the 10th of October, coming again to the surface on the 5th of April, *not having grown during the winter*. In May they buried themselves (with their heads downwards as with *Helix pomatia*,—in winter they and other species buried themselves with the head upwards), appearing again in a week *double the size*; this process was carried on at about fortnightly intervals until July the 18th, when they were almost fully grown. It is worthy of remark that this species, as well as *Helix pomatia* and *Helix nemoralis*, and probably other of the Helicæ, form an operculum at the aperture, after which they retire considerably within the shell, and form a second (much thinner), behind which they rest during the winter.

It would be swelling this paper too much to describe all the observations in full; it will perhaps therefore be considered sufficient to remark that the process of growth *within the ground* takes place with *Helix nemoralis*, *Helix virgata*, *Helix caperata*, and *Helix hispida*. *Helix rotundata* burrows into decayed wood to increase the size of its shell. *Zonites radiatulus* appears to remain on decaying blades of grass; whilst *Pupa umbilicata*, *Clausilia nigricans* and *Bulimus obscurus* bury their heads only to increase their shells. With respect to *Zonites cellarius*, *Zonites lucidus*, and *Zonites nitidulus*, it was not satisfactorily ascertained whether their heads were buried during the process of growth.

Observatory, Beeston,

E. J. LOWE.

1854, February 14th.

BOTANICAL SOCIETY OF EDINBURGH.

April 13, 1854.—Professor Balfour, President, in the Chair.

Professor Balfour stated that Mr. Croall of Montrose, in an account of a trip to Clova, published in Hooker's Kew Miscellany, had remarked—" *Polypodium alpestre* at the head of the glen grows side by side with *Lastrea dilatata*, but I nowhere observed *Athyrium filix-femina* associated with, or at the same elevation as, *Polypodium alpestre*." This statement was not in accordance with what was observed by Dr. Balfour and his party during their trip to Clova at the beginning of August last. They found *Athyrium filix-femina* and *Polypodium alpestre* growing together both in Glen Fiadh and in Glen Dole. In many instances, it was necessary to look at the

fructification in order to avoid picking the one for the other. At the head of Glen Dole, and above the path called Jock's Road, both ferns grew luxuriantly. *Polypodium alpestre* descends much lower than has been supposed. It was found at little more than 50 feet above the Dole, on the bank below the *Astragalus alpinus* cliff.

Mr. G. Lawson remarked that a statement similar to that of Mr. Croall had been made to him last summer, and he was thus led to pay particular attention to the point when he visited Clova as one of Professor Balfour's party. The statement is not correct, the *Athyrium* being a frequent associate of *Polypodium alpestre*. This circumstance, together with the variability of both plants (whose respective varieties are in some cases very similar to each other), rendered it often difficult to distinguish the one from the other, without inspecting the sori.

Mr. G. Lawson exhibited under the microscope preparations of the colouring-matters of the flower of *Strelitzia Reginae*, and drawings of the same. This plant is interesting as presenting examples of both the xanthic and cyanic series in the same flower, but still more remarkable in the microscopical peculiarities of its colouring-matters, which are referred to by Mohl in the "Vegetable Cell" (p. 44). Mr. Lawson stated that in the blue (or purplish-blue) part of the flower, the colouring-matter entirely consists of spherical granules of an intense blue or bluish-purple colour, with occasionally cells containing similar shaped granules of bright crimson. All the granules of any one cell appear to be constantly of the same colour. In the yellow part of the flower, the colouring-matter appears in a very different form. Instead of spherical granules, we have slender filaments, which are more or less spirally twisted and rolled up in various ways in the cell, resembling in their twisting the more delicate spiral fibres in the external cells of the roots of Epiphytal orchids; but they are in many cases short, and form small round coils, giving the outline of globular bodies, which likewise, however, occasionally occur. While red and blue colouring-matters usually occur in the vegetable kingdom diffused in the cell-sap, we find them both in *Strelitzia* in a globular form. Although deceptive appearances often presented themselves, Mr. Lawson felt inclined to believe, from the examination of numerous specimens, that diffused colour did not at all occur in the flowers of *Strelitzia*. When the flower has attained its maturity, the cells are often so completely filled with the deep blue granules, that they appear as a dense mass of blue, apparently homogeneous, matter in the interior of the cell. The flower should therefore be examined in the young state, not only before it has expanded, but long before the spathe has opened to expose it to the action of the light; even then the colouring of the flower will be found to have far advanced, but the cells are not then so completely filled with the blue globular granules as to disguise their character, and are distinctly seen. The cells containing the yellow filaments are generally of larger size and more elongated in form than those containing blue or red globules.

The following papers were read:—

1. "Experiments on the Dyeing properties of the Lichens," by W. Lauder Lindsay, M.D., Assistant Physician Royal Crichton Institution, Dumfries.

The author presented to the Society the tabulated results of between 500 and 600 experiments made two or three years ago, the chief object of which was to endeavour to call attention to the fact, that we possess in our own island Lichens capable of furnishing dyes nearly, if not quite, equal in beauty to Orchil, Cudbear, and Litrus.

2. "On a species of *Potamogeton* from Lough Corrib," by Mr. J. Kirk, of Coventry. Mr. Kirk considered the *Potamogeton* as allied to the *P. longifolius* of 'English Botany Supplement,' and remarked:—

"My specimens differ from the plate in Eng. Bot. Sup. in having most of the leaves on long stalks, and in the absence of the apiculus. The specimen there figured was picked up floating [growing from the bottom, not loose—Ed. *Ann. Nat. Hist.*] in Lough Corrib in July 1835, by Mr. J. Ball, 'whilst sailing between Ma'am and Cong,' and given by him to Mr. Babington, and is the only specimen known to have been found in the British Islands up to September 1853. The most striking character in my specimen is the singular and prominent midrib, the central portion of which consists of three longitudinal veins or ribs running closely parallel with each other, whilst on either side are three to six ribs running closely parallel to them, but rather more distant from each other; the whole connected by transverse veins, and in the fresh state often more than one-fourth of an inch in width, appearing, until closely inspected, a compact solid midrib, on either side of which are two to five fine veins, the whole connected by numerous secondary veinlets. Some of the submerged leaves were 18 inches in length, and most beautifully pellucid, in this respect far surpassing the other British members of the genus. The floating leaves were scarcely coriaceous, linear-lanceolate or lanceolate, and occurred only in small quantities. The original specimen, in Mr. Babington's possession, exhibits traces of this peculiar midrib, which, I think, is almost sufficient to identify it with my specimen. The differences alluded to in the outset are not more than may be found between specimens of well-known species gathered in their prime, and others gathered, as in the present specimens, where decay has actually commenced—witness *P. rufescens* and *P. zosteræfolius*. In the last-named species, the early leaves are invariably apiculate, but no trace of an apiculus is to be found in those produced during or after flowering-time. Whether the plant is identical with *P. longifolius* (Gay), is a question I am not prepared to answer, but feel much disposed to doubt the latter being anything more than a name; at any rate no individual with fresh specimens of my Lough Corrib plant before him could overlook the prominent midrib (although in the dried state it is not nearly so conspicuous). Mr. Babington, from inspection of some of my dried specimens, considers it different from his original specimen on the grounds already stated, and is disposed to look upon it as perhaps the *Potamogeton sparganifolius* of Fries.

Mr. Borrer, to whom I sent recent fragments as well as dried specimens, considers it identical with the Eng. Bot. Sup. plant."

3. "On the Flowering of Plants in the Royal Botanic Garden," by Mr. M'Nab.

4. Illustrations of the application of "Nature Printing" to the copying of Botanical Specimens, by W. Lauder Lindsay, M.D.

MISCELLANEOUS.

BELLIA ARENARIA.

To the Editors of the Annals of Natural History.

8 Mulgrave Place, Plymouth, May 17, 1854.

GENTLEMEN,—In the April Number of this Journal for 1851, p. 318, there is figured and described by me an Amphipod Crustacean under the name of *Bellia arenaria*.

Finding that the same generic name has been applied to one of the *Anomoura*, it would be better perhaps, for the convenience of science, that the same name should not be repeated in one class of animals.

It is therefore proposed to call this animal for the future "*Sulcator arenarius*," or "the Sand-ploughing Screw," the name being derived from the furrow which it makes in the wet sand when crawling; the only one of the tribe, as far as I am aware, that so progresses.

I am, Sirs, very obediently yours,

C. SPENCE BATE.

MR. BOWERBANK AND PROF. SEDGWICK.

To the Editors of the Annals of Natural History.

Queen's College, Belfast, 22nd May, 1854.

GENTLEMEN,—Mr. Bowerbank's letter, in your last Number, in reply to Professor Sedgwick's remarks on a statement printed by M. Milne-Edwards in the Palæontographical Society's volume for 1852, may be briefly answered (and I hope to his satisfaction) by my statement that *I have seen the list he enclosed* of the fossils he asked for, and *it only contained the names of the new British Oolitic corals* mentioned in my paper on Mesozoic Radiata in a former volume of the 'Annals,' and *no Palæozoic corals*. Prof. Sedgwick's statements are therefore strictly correct, and Mr. Bowerbank's surmises that he had written for both kinds, as well as any defence of Prof. Milne-Edwards founded thereon, are clearly negatived. The list is still at Cambridge.

I have the honour to remain, Gentlemen,

Your most obliged and obedient servant,

FREDERICK M'COY.